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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,424	03/08/2004	Eric A. Nyberg	14185-B	1883

29171 7590 10/19/2005

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EXAMINER

MAI, NGOCLAN THI

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/796,424

Applicant(s)

NYBERG ET AL.

Examiner

Ngoclan T. Mai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-147 is/are pending in the application.
- 4a) Of the above claim(s) 11-21, 23, 54-137, 140-142, 146 and 147 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9, 10, 22, 24-33, 36-40, 43-51, 53, 138, 139 and 143-145 is/are rejected.
- 7) ☒ Claim(s) 8, 34, 35, 41, 42 and 52 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/6/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

1. Applicant's election without traverse of group I, claims 1-53, 138-147 and further elect species b, i.e., metal and species ii, i.e., getter material in the reply filed on Aug. 16, 2005 is acknowledged.

Accordingly claims 1-10, 22, 24-53, 138-139, 143-145 read on the elected invention and species.

2. Claims 11-21, 23, 54-137 and 140-142, 146-147 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention and species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on Aug. 16, 2005.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 40 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 40 contains the trademark/trade name "Surfonic N-100[®]". Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe surfactant and, accordingly, the identification/description is indefinite.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1–5, 7, 22, 24-32, 38-39, 43-49, 138-139 and 144-145, are rejected under 35 U.S.C. 102(b) as being anticipated by Herrmann (U.S. Patent No. 3,330,892).

Herrmann teaches a moldable batch mixture for forming article by powder metallurgy forming techniques as recited in claim 2, wherein the mixture comprises inorganic material such as metal powder mixed with and dispersed in a fluid organic vehicle together with an organic deflocculant and binder (col. 1, l. 10-27). The organic vehicle can be any organic material that is solid at normal room temperature and pressure such as paradichlorobenzene, benzoic acid and naphthalene, col. 3, Table I. The organic binder can be any one of carnauba wax, polymethyl methacrylate resin, polyethylene glycols with average molecular weight ranging from 3000 to 20000, polyvinyl acetate resin, unoxidized and oxidized microcrystalline waxes, styrene resins with average molecular weights of 1500 or more, chlorinated naphthalene and polyvinyl alcohol resin (col. 7, l. 3-10). The organic binder, the organic vehicle and the organic deflocculant taught by Herrmann together reads on the claimed aromatic binder system as recited in claims 1, 3, 4, and 5.

Regarding claim 7 and 24-26, Hermann discloses employing nickel and copper as metal powder for the moldable batch mixture where approximately 80% by weight of the metal powder and 17% by weight of aromatic species are used, see Example 12. Although the amounts of the aromatic species and metal powder are in wt. percent, it is the examiners position that, when converted to volume percent, the amounts aromatic species and metal powder would inherently encompass the claimed amounts absent evidence to the contrary. In the alternative, no patentable distinction is seen to exist between the reference and the claimed invention in the absence of any evidence showing the contrary.

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Regarding claims 27 to 32, Hermann teaches that the organic binder can be present in the amount of 2-3 percent by weight (col. 2, l. 16-18) and the organic binder taught includes polymethyl methacrylate which is a thermoset polymer and polyvinyl acetate resin, which is thermoplastic polymer. Although the amount of the binder phrase is in wt. percent, it is the examiners position that, when converted to volume percent, this amount inherently encompasses the claimed amount absent evidence to the contrary. In the alternative, no patentable distinction is seen to exist between the reference and the claimed invention in the absence of any evidence showing the contrary.

Regarding claims 38-39, Hermann discloses the deflocculant can be surfactants (col. 4, l. 18+).

Regarding claim 43-46, Hermann discloses the deflocculant can be fatty acid (col. 4, l. 27-33) and Table III and metal salt of fatty acid (col. 4, l. 53-61 and Table V). These deflocculants inherently act as lubricant as claimed. As for claims 48-49, Hermann discloses employing oleic acid, i.e., fatty acid in the amount of 6cc., Example 12. Although the amount of the lubricant is in volume and the others are in weight percent, it is the examiners position that, when converted to volume percent, these amounts inherently encompass the claimed amounts absent evidence to the contrary. In the alternative, no patentable distinction is seen to exist between the reference and the claimed invention in the absence of any evidence showing the contrary.

Regarding claim 47, Hermann teaches organic binder can be carnauba wax and microcrystalline waxes, col. 7, l. 5 and 8, which inherently serve as lubricant. Since Hermann teaches the claimed moldable batch mixture and that it can be formed into article by molding technique such as injection molding, col. 1, l. 14-19, the article produced by this technique would inherently have the claimed improvement as recited in claims 138-139 and 144-145.

"Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best, 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' In re Spada, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior

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art products do not necessarily possess the characteristics of the claimed product."

7. Claims 1-7, 9-10, 22, 24-26, 50-51 and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by JP06-002011.

The reference discloses the a powder mixture comprising one or more than 2 kinds of powders selected from the group consisting of metal alloy, intermetallic compound and ceramic and one or more than 2 kinds of powders of sublimable materials. On page 4 of the translation, the reference discloses the metal powder is a mixture of two kind of metals, line 7 and the sublimable materials are chlorobenzene and naphthalene powder, lines 37-38. Although the amounts of the aromatic species and the metal powder are in weight percent, it is the examiners position that, when converted to volume percent, these amounts inherently encompass the claimed amounts absent evidence to the contrary. In the alternative, no patentable distinction is seen to exist between the reference and the claimed invention in the absence of any evidence showing the contrary.

8. Claims 1-5, 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Morita et al. (2002/0057980 now Morita).

Morita discloses a powder mixture for forming into article by compacting containing fine tantalum metal powder mixed with an organic binder such as naphthalene, which is being dissolved in an organic solvent, [0151].

9. Claims 1-5, 9, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by JP04116104.

The reference discloses a composition consisting of a metal powder, a binder and a sublimable substance such as naphthalene and dichlorobenzene, see abstract.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-6, 9, 22, 27, 29-30, 43-45, 47, 138-139, and 143-145 are rejected under 35 U.S.C.

103(a) as being unpatentable over Kiyota et al. (Pat 4,964,907, now Kiyota) in view of JP04-116104.

Kiyota discloses a composition for making sintered body by injection molding, which comprises one or more metal powder and/or one or more alloy powder with a binder and one or more plasticizers, lubricants and debinding promoters, which can be sublimable substance such as camphor, col. 4, l. 20-25 and 42-43.

The difference between the claim and Kiyota is that Kiyota does not teach aromatic binder system.

JP04-116104 discloses the utilization of camphor, naphthalene or dichlorobezene as sublimate substance to facilitate the removal of binder during processing of molded body. The reference teaches by removing the sublimate substance before dewaxing, the time required to dewax a molded body consisting of metal powder, a binder and a sublimable substance is shorten without damaging the molded body. The sublimable substance disclosed can be camphor and aromatic compound such as naphthalene and dicloro-benzene.

Since Kiyota teaches using sublimable substance as debinding promoter (i.e., dewaxing promoter), it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute camphor with the aromatic compound as they function as equivalent debinding promoter as taught by JP04-116104.

As for claim 6, since JP04-116104 discloses the claimed benzene and naphthalene are conventionally known in the same field of endeavor or the analogous metallurgical art for promoting the dewaxing, therefore combining known ingredient having known functions, to provide a composition having the additive effect of each of the known functions is within realm of performance of ordinary skill artisan. In re Castner, 186 USPQ 2 13 (217).

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Regarding claims 27, 29-30, Kiyota teaches the binder is comprised of thermoplastic and/or wax, wherein the thermoplastic can be acrylic resins, polyethylene, polypropylene and polystyrene.

As for claims 43-44 and 47, Kiyota teaches the claimed limitation by teaching lubricant of higher fatty acid, fatty acid amide, a fatty acid ester and waxes wherein the wax can be crystalline wax and paraffin wax, col. 4, l. 39-41 and 31-32. While Kiyota does not specifically teach fatty acid as recited in claim 45, however the examiner take official notice that fatty acid as recited in the claim is conventionally well known and that using fatty acid of such type would have been obvious.

Regarding claim 138-139 and 144-145, while Kiyota does not teach the contents of C and O in the metal injection-molded article each in the amount of less than or equal to 0.2 wt.%, however, the contents of C and O in Kiyota's metal-injection molded article when employing the aromatic compound promoter as taught by JP04-116104 would be expected to be in such amount since it appears the claimed property is material property and the properties as recited in the instant claims would have inherently possessed by the teachings of the cited references. Therefore, the burden is on the applicant to prove that the product of the prior art does not necessarily or inherently possess characteristics attributed to the claimed product. In re Spade, 911 F.2d 705, 708, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990), In re Best, 195 USPQ 430 and MPEP § 2112.01.

"Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best, 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' In re Spada, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 195 USPQ 430, 433 (CCPA 1977)."

Furthermore, while the amounts of C (less than 0.05 wt%) and O (0.31 to 0.22 wt%) of the molded article are not exactly overlapping that are claimed by the applicants, however it has been established that a prima facie case of obvious exists where the claimed ranges and the prior art ranges

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do not overlap but are closed enough that one skilled in the art would have expected them to have the same properties i.e., the same increase in the amount of N. *Titanium Metals Corp. of America v. Banner*, 779 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985)

As for claim 143, Kiyota teaches molded body is used for medical purposes such as prostheses, col. 1, l. 24-30.

12. Claims 6, 33 and 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hermann.

While Hermann does not specifically teach aromatic binder system comprises benzene and naphthalene and polymer mixture of at least one thermoplastic polymer and at least one of thermoset polymer, however, it is well settled that it is a matter of obviousness for one of ordinary skill in the art to combine two or more materials when each is taught by the prior art to be useful for the same purpose. In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). Hence it would have been obvious to one of ordinary skill in the art to combine naphthalene with the benzene containing compound listed as equivalents of the naphthalene and the thermoset polymer with the thermoplastic polymer listed as equivalents of the thermoset polymer by the reference. Although the amount of the binder phase is in wt. percent, it is the examiners position that, when converted to volume percent, this amount inherently encompasses the claimed amount absent evidence to the contrary. In the alternative, no patentable distinction is seen to exist between the reference and the claimed invention in the absence of any evidence showing the contrary.


13. Claims 8, 34-35, 41-42, and 52 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoclan T. Mai whose telephone number is (571) 272-1246. The examiner can normally be reached on 9:30-6:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Ngoclan T. Mai
Primary Examiner
Art Unit 1742

n.m.